FLEX FILE 128

- **SELF BOOTING**
- **AUTOMATIC**
- **40 - 80 COLUMN**

A POWERFUL, VERSATILE, EASY-TO-LEARN DATABASE WITH MANY ADVANCED FEATURES FOR THE COMMODORE 128 COMPUTER.

- FEATURES EASY DATA ENTRY
- HANDLES UP TO 7000 RECORDS PER FILE
- READS MANY POPULAR WORD PROCESSORS' FILES
- PRESENTS DATA IN REPORT, MAILING LIST OR MEMO FORM
- INTEGRATES WITH PRACITCALC 64 ELECTRONIC SPREADSHEET
- SORT ON UP TO FIVE FIELDS
- RESTRUCTURE FILES WITHOUT RETYPING ENTRIES
- SUPPORTS TEN MATHEMATICAL FUNCTIONS

INTRODUCTION

More easily explained as (management of information), a data-base organizes information for efficient access and manipulation.

FLEX FILE 128 is a flexible database program equipped with enough features to handle complex database tasks. Its capacity is significant; on a Commodore 128, it can handle over 7000 records. With **Flex File,** entry of data is easy and simple. Without retyping a single entry you can always restructure a file. Large quantities of data can be entered quickly through batch entry, then later accessed in random files. **Flex File 128** can easily handle complicated math equations.

FLEX FILE 128 also returns your data the way you need it. Files can be easily arranged to print as mailing labels, and reports are easily structured for clear presentation. Selective records can also be printed, so if you're only interested in outstanding checks over $1000.00, that's all you'll see! **FLEX FILE 128** also supports many word processing programs, making it easy to merge files for forms and letters.

With a host of functions which are easily accessed, **FLEX FILE 128** will soon become an invaluable tool, meeting your database needs with ease. 100% compatible with Commodore 64 data disk. Best of luck with the program.

Donald Woods

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Chapter One: GETTING STARTED

Someone wise once said, "An ounce of prevention is worth a pound of cure." She might well have been speaking of **Flex File 128** and its manual for it's essential that you read Chapter One to avoid much frustration and confusion in Chapters Two through Eleven.

WHAT YOU'LL NEED:

To use the program, you must have:

- The **Flex File** disk and manual
- A Commodore 128 computer
- A compatible disk drive
- A TV or monitor
- A blank disk (to make a copy of the program disk)
- A blank disk (for storage of your files)
- All the assorted cables to connect the above

Connect all the hardware, set it aside and continue reading before using **Flex File 128.**

REGARDING DISKS

The **Flex File 128** which you purchased will be called the program disk. You should save your data to separate blank disk, called data disks. As a rule, you should never save files to the program disk. To follow the examples of the manual you will need to load files from the program disk; however, do not save any files to the program disk.

Data-Base Definitions: There is a certain jargon peculiar to data-base programs which any user of **Flex File 128** should know.

The building blocks of database can be easily compared to an ordinary address book.

For each person in your address book, you have a series of information. All the information about one person; name, address, phone number, etc., is called a record.

If you look at the address book, you will find similar categories of information in each **RECORD**; every entry has a address, every entry has a phone number. The common categories within each **RECORD** are called its **FIELDS.** Each **FIELD** is made up of numbers and letters: they are called **CHARACTERS.**

If you combine all the **FIELDS** about each person and collectively call them **RECORDS**, and then combine all the **RECORDS** and put them into your address book, you will have what is called a **FILE**.

- A **FILE** is made up of **RECORDS**.
- A **RECORD** is made up of **FIELDS**.
- **FIELDS** are made up of **CHARACTERS**.

SEQUENTIAL FILES: A sequential file is the simplest kind of file. Each record takes its place one behind another and to access any record, you must first "go through" the records which precede it. In order to reach the tenth record in a sequential file, you must first read through the first nine.

RANDOM ACCESS FILE: A random access file allows the user to reach the data in record quickly. When you ask for a certain record in a random access file, the program moves immediately to that record without scanning the preceding information.

SORT: To sort according to a given file means to put it in order, either alphabetically or numerically, according to the selected field. For example, a professor's grade book could be sorted alphabetically according to last name (which is one field) or numerically by grade average (a different field).

KEY: Within a random access file, fields may be designated as certain keys. The records within the file can then be put into alphabetic or numeric order according to any one of the keyed fields. For example, you can designate last name and zip code as two keys within the file of a mailing list. You could then organize the file by either last name or zip code or both.

FORMAT FILES: To print a label or report, **Flex File 128** requires that you specify a format which will dictate just how the information will be printed. The program will ask you a series of questions; your responses will decide the format the label or report is to take. The format may be saved on disk for later use. The file which contains the instructions for formatting your data is called a format file.

Note 1-1: All characters which are typed and keys which are to be to be pressed in the instructions will be shown in boldface type. Correct grammatical practice is not always followed in the instructions in this manual. Statements which tell you what to type are not ended with punctuation. This is simply to eliminate any confusion about exactly what is to be typed.

Loading Flexfile 128

After reading the above you are start using **Flex File 128.**

1. Turn the power on to your disk drive and monitor or TV.
2. Put your program disk into your drive.
3. Turn on your Commodore 128.
4. This is self booting.
5. This is 40 or 80 columns automatically.

The screen will read:

booting. . . and then.. .

```
Flex File 128(C) 1986 Donald Woods
  MAIN MENU

CUSTOMIZE FLEX FILE 128          F1
START A NEW FILE                 F3
OPEN AN OLD FILE                 F5
BACKUP DISK                      F2
VIEW A SEQUENTIAL FILE           F4
DIRECTORY                        F7
NEW A DISK (HEADER)              F6
↑ EXIT FLEX FILE 128
```

Note 1-2: If you look at the first letter of each line in the Main Menu on the screen, you will notice that the first letter is a different color. To choose an option from the Main Menu and all the other menus in **Flex File 128,** just type the first letter of the option.

Called the main menu, this listing serves as a Table of Contents to the program and its functions. Each function will be dealt with in the following chapters. For quick reference to any function, refer to the Table of Contents or the Index.

Before using **Flex File 128,** first make a backup copy of the program disk. Use the **BACKUP DISK** function on the **Main Menu.** Use this copy, (put the original disk away for safe keeping). Customize the disk according to the Commodore 128 and your particular peripheral hardware.

Customizing Flex File 128

To customize your **Flex File** disk:

1. Type C from the Main Menu to start the customization process. (Remember, it's not necessary to press Return after selecting an option from a menu). The screen will read:

```
DO YOU WANT TO CUSTOMIZE FLEX FILE 128? N
```

2. The default answer is N, allowing you to exit the customization procedure if you selected it accidentally. If this is your first time using Flex File 128, type Y and press RETURN.

3. The Screen will read:

```
WHAT IS YOUR PRINTER'S DEVICE NO.? (MOST
PRINTERS ARE DEVICE #4). (ENTER 3 IF YOU HAVE
NO PRINTER.) 4
```

If you are uncertain of your printer's device number, refer to the manual which accompanied your printer. Enter the appropriate number (or leave the number 4 as is) and press RETURN.

4. The following screen will read:

```
DO YOU HAVE?:
1  ONE SINGLE DRIVE (2031,1540,1541,1571)
2  TWO SINGLE DRIVES (2nd DRIVE=DEVICE 9)
3  ONE SMALL DUAL DRIVE (4040,3040,2040
4  LARGER DRIVE (8050,8250,HARD DISK)
```

The default answer, the most common one, is one. If true in your case, just press RETURN. Otherwise, enter 2, 3 or 4 and press RETURN.

5. The screen will read:

```
CHANGE COLOR:
    SCREEN
    CURSOR
READY?
```

You can select the colors of the screen and cursor or leave them as they appear when **Flex File 128** is loaded. To change the color, type the initial reversed letter of the area to be changed. With each touch of the initial letter of the word, the color shown will change. You can change this as many times as desired. When satisfied with the colors shown for all screen parts, type R (the first letter reversed in the word word READY).

6. The following question will then be displayed:

```
CORRECTIONS? (Y/N)
```

At this point, **Flex File 128** provides you with an opportunity to change any of the options you selected in the customization process. If you answer Y to the above question, you do not have to re-enter all the customization information. Instead, each question will be redisplayed with your answer as the default answer. Just press RETURN if your initial answer was correct; otherwise type the corrected response and press RETURN. Once you are certain that all your answers to the previous questions are correct, type N

7. The screen will read:

```
REMOVE THE WRITE-PROTECT TAB FROM YOUR
PROGRAM DISK AND INSERT IT IN DRIVE 0

READY?
```

The small notch on your Flex File 128 disk has been covered to protect the disk when you do not want to write to it. To save the changes you specified in the customization process to your **Flex File 128** disk, carefully, without bending the disk, peel off the small tab which covers the notch and place the disk in the drive. Type R when ready.

8. When the changes have been saved, the words **LOADING MAIN MENU** will appear on the screen and finally the Main Menu will return to the screen. At this point you have customized your copy of **Flex File 128** . You can recustomize at any time to change the options on the C128. Unless you change the hardware you are using or wish to change the screen colors, you will not need the customization process again.

With your **Flex File 128** loaded and customized, you are ready to start using it as the competent data-base manager it truly is. The following chapters will use two sample files: ADDRESS BOOK, which you will create, and INV, which is included on your program disk. Follow the sample problems closely as you read the manual for the first time: later you can use the manual according to the index and command summary as a quick reference guide. Best of luck with **Flex File 128.**

Chapter Two: STARTING A NEW FILE

With your copy of **Flex File 128** loaded and customized, your're ready to start entering your data. This chapter will use a sample file, called **ADDRESS BOOK**, to illustrate how to start a file. The file can later be used as your personal address book.

STARTING a file does not involve the actual entry of the data, but is the process by which the file structure is decided. Much like deciding how you will label the drawers and folders within the actual filing cabinets, the organization should be decided before you start to cram the drawers with papers. Once the structure of the files has been set, it can be restructured (like filing cabinet drawers) to meet changes in your data, a feature which few data-base programs have.

NOTE 2-1: Throughout the use of **Flex File 128** the screen display will prompt you to **INSERT PROGRAM DISK** and **INSERT DATA DISK** if you are using a single disk drive. These instructions appear frequently on the screen, are easily understood and should be followed. The step-by-step instructions in this manual will not include mention of these two steps: it is presumed that you will follow the screen prompts, insert the correct disk each time, and will type R when ready.

With the Main Menu on the screen:

1. Type S (the first letter of the option "Start a New File". Remember, there is no need to press RETURN.) The screen will read:

```
START A NEW FILE
NAME OF NEW FILE
PRESS <RETURN> TO RETURN TO MAIN MENU
```

2. Type **ADDRESS BOOK**. File names can be a maximum of 12 characters. (Should you select this option accidentally, **Flex File 128** allows for an easy return to the Main Menu. Do not type file name: just press RETURN).

   The sample file you will be using will be an address book of both business associates and personal friends. The file will contain some fictitious records for use as examples: the remainder will be your own entries. Press RETURN.

3. The screen will read:

> IF THIS FILE IS TO BE SIMILAR TO ANOTHER FILE, ENTER THE OTHER FILE NAME (OTHERWISE LEAVE BLANK)

Starting a new file involves establishing the format of the file. If you were creating a file for February's sales which was to be arranged identically to your file for January, you would, at this point, enter the correct file name for January. Its format would be copied, entered as the format for February, and an opportunity would be provided for you to make any relative changes.

Since **ADDRESS BOOK** is not similar to any other files (because you have no other files at this point!), simply press RETURN.

It is at this point in starting a file that you need to decide the shape the file will take. Let's say that your address book contains 25 names. You also have eight pieces of information which you want to file on each entry of the book. They are:

First Name
Last Name
Company Name (if any)
Address
City
State
Zip
Telephone Number

The file will therefore contain 25 records of eight fields. For efficiency, you will want **Flex File 128** to be able to sort or arrange your **ADDRESS BOOK** file according to last name or zip code. With the shape of your file decided, you can continue.

4. The next question displayed will read:

```
ENTRIES IN UPPER CASE ONLY
Y
```

For most computer uses, upper case letters (all CAPITALS) are easier to use and read, especially with a dot matrix printer.

If you want upper and lower case letters, type N and press RETURN. The screen will immediately switch to lower case. From this point on, all entries must be entered in upper and lower case, using the SHIFT key, as in typing, to use capitals. However, WHENEVER THE COMPUTER ASKS YOU A QUESTION RESPOND IN UNSHIFTED LETTERS. The only exception to this is when you are asked to enter headings as they are to appear in report.

The file **ADDRESS BOOK** will use all upper case letters: therefore, the flashing default answer of Y is correct. Simply press RETURN.

5. The program will ask:

```
WHAT IS THE MAXIMUM NUMBER OF RECORDS
THE FILE WILL CONTAIN?
```

As explained earlier, a file is made up of records, which are made up of fields. So that **Flex File 128** can best allocate the available space, you are asked for the maximum number of records your file will contain. For a complete explanation of **Flex File 128's** capacity, refer to Appendix A.

For this example, type 30 (to allow a little space) and press RETURN.

6. The screen will read:

```
WHAT IS THE MAXIMUM SIZE OF EACH RECORD?
(TOTAL CHARACTERS IN ALL FIELDS PLUS
TWO FOR EACH FIELD)
```

There is a maximum of 254 characters per record. You are not required to set exact lengths for each field in the record because **Flex File 128** maximizes available space.

However, **Flex File 128** needs to know how many characters each record will use to determine if there is sufficient room for the number of records you selected in step #5.

Looking back at the eight fields just listed, we can guess that each record would use about 92 characters; 10 for first name and middle initial, 15 for last name, 20 for company name, 20 for address, 15 for city, 2 for state, 5 for zip code and 10 for telephone number. Therefore, 97 characters are needed for the entries themselves plus, as the screen indicates, two additional characters for each field: the resulting total is 111 (97 + (2 * 7 fields)).

Type 111 and press RETURN.

7. The screen will read:

```
MAX REC SIZE = 127
HOW MANY FIELDS PER RECORD?
0
```

Flex File 128 calculates for you the largest possible record size you may have with the number of records you have selected. In this case, with 30 records, your maximum record size is 127 characters. This value will vary depending upon the number of records and fields in each file.

The program now needs to know the number of fields. Type 8, (as decided in step #5), and press RETURN.

8. The program will prompt for:

```
TITLE FOR FIELD #1?
```

Each of the eight fields must be titled to accurately reflect the data which will be entered in it. The question, in this case, will be asked eight times, once for each field. Field titles can be a maximum of 70 characters each in length. Type FIRST NAME and press RETURN.

The screen will read:

```
TITLE FOR FIELD #2?
```

Type LAST NAME and press RETURN.

The screen will read:

```
TITLE FOR FIELD #3?
```

Type ADDRESS and press RETURN. Continue and enter the field names (as listed in step 3), pressing RETURN after each response.

9. After all eight field titles have been entered, the screen will read:

```
HOW MANY KEYS DO YOU WANT?

(EXAMPLE IF YOU HAD A KEY FOR NAME AND ZIP
CODE, YOU COULD CHANGE THE FILE FROM
NAME ORDER TO ZIP CODE ORDER AT ANY TIME)
1
```

KEYS are designated fields which are used for arranging the records in a specified order. The example on the screen shows that if you had a **KEY** for name and another for zip code, you could order the file according to name or zip code. Two **KEYS** should be sufficient: one to sort by zip code, (a common method of reducing the cost of bulk mailing), and one to sort alphabetically by name.

Therefore, type 2 and press RETURN.

10. The next question will read:

```
HOW MANY FIELDS IN KEY NO. 1?

(EXAMPLE: IF A KEY CONTAINS TWO FIELDS,
LAST NAME AND FIRST NAME, RECORDS CAN BE
ORDERED BY LAST NAME, AND ANY GROUP OF
PEOPLE WITH THE SAME LAST NAME WOULD BE
ORDERED BY THE FIRST NAME)
0
```

A **KEY** can contain up to 5 fields, which would allow you to organize a file by up to five categories. For example, if you were arranging a list of hospital personnel according to the department in which they worked, you would select a key with four fields. You would first want the personnel arranged according to department (field #1), then according to job position (field #2), then by last name (field #3 and finally by first name (field #4), should there be more than one employee within a department with the same surname. In the **ADDRESS BOOK** example your first key will order the records by name. There should be two records in that key (just as desccribed in the screen example).

Type 2 and Press RETURN.

11. The program will respond with a list of the fields and their corresponding numbers and the question:

```
FIELD # OF 1ST FIELD IN KEY #1?
```

The first field which should be "looked at" when the records are being organized by name is the LAST NAME field, which is field #2. Type 2 and press RETURN.

12. The next question is:

```
FIELD # OF 2ND FIELD IN KEY #1?
```

Type 1 (for first name) and press RETURN.

13. The screen will read:

```
HOW MANY FIELDS IN KEY #2?
```

Key #2 is to organize the records according to zip code.
Type 1 and press RETURN.

14. The screen will read:

```
FIELD # OF FIRST FIELD IN KEY #2?
```

Type 7 and press RETURN.

15. The screen will then display the following:

```
ESTIMATED SIZE OF FILE WHEN FULL IS 18 BLOCKS. (RECOMMENDED MAXIMUM BLOCKS ARE: 600 ON THE 1540 OR 1541 DISK DRIVE ABOUT 300 IF FILE SHARES DISK WITH PROGRAM) ESTIMATED AMOUNT OF RAM USED IS 184 BYTES (RECOMMENDED MAXIMUM RAM IS 20700 BYTES)
```

There are two capacities with which you should be concerned. One is the amount of space your file will occupy on your disks, measured in blocks. The **VIEW DIRECTORY** option, described in Chapter Three, shows the contents of a disk as well as the number of blocks

remaining on the disk.

The other is the amount of memory space (RAM), measured in bytes, which your file will use in the memory of the Commodore 128. Should you create an extraordinarily large file with too many fields and too many records, you may get an OUT OF MEMORY message which indicates the computer memory is full. The message may not come when you create the file, but rather when attempt to you manipulate it for a report or mailing labels. If you are hesitant about the size of a file, separate it into two.

The screen display shows the recommended limits. If you have exceeded either of these limits, you will have to correct the file information you just entered. To do so, type Y and press RETURN.

If you merely want to review the format just entered, type Y and press RETURN. Each question and the answer you gave will appear. If the answer is correct, press RETURN; the next question and answer will appear. When 128 finished, the "CORRECTIONS" will reappear. Type N.

16. The screen will read:

```
DO YOU WANT TO FORMAT THE DISK?
(ERASE OLD DISK OR PREPARE NEW DISK)
N
```

The **FORMAT** command erases all material on a disk and prepares the disk to accept data.

If you are entering your file on a disk with other information, you obviously will not format your disk.

If you are storing your data on a blank disk, the disk must either have been previously formatted or you must type Y and press RETURN to start **Flex File 128's** formatting process.

If you choose Y, the screen will read:

```
NAME OF DISK?
MAXIMUM 15 CHARACTERS, DO NOT USE
PUNCTUATION
```

Type PFILE and press RETURN.
The program will ask:

```
ID NUMBER?
(EACH DISK SHOULD HAVE A DIFFERENT ID)
```

Type 11 (or any two-digit number) EXCEPT 37, which is the **Flex File 128** disk's ID number and press RETURN.

17. The question of CORRECTIONS? (Y/N) will be asked whether you choose to format the disk or not. This is a safeguard against writing over important data or attempting to save the file instructions to an unformatted disk, in which case you would lose the file structure you just specified. If you answer Y, the question of "DO YOU WANT TO FORMAT THE DISK?" will reappear, along with your answer. Press RETURN.

When certain that all your correct, type N when the question of CORRECTIONS reappears. After a slight pause,

18. The screen will appear:

```
INSERT DISK FOR RANDOM FILE
```

Insert the disk on which you intend to save your file. Type R when ready to start saving the format which your file is to have.

If you asked that the disk be formatted, the message FORMATTING THE DISK MENU will appear. For all saving processes, the screen will then read:

```
SCRATCHING OLD BOOK KEEPING
SAVING POINTERS
SAVING BLOCK MAP

INSERT PROGRAM DISK WHEN READY
READY?
```

19. Place the **Flex File 128** disk in drive and type R. The words LOADING DISK MENU will appear and the Main Menu will return to the screen.

You now have a file, or at least the structure of one! Now to enter data, you have to Open an Old File, which is explained in Chapter Three.

Chapter 3: OPENING AN OLD FILE

Once a file format has been created and saved, the file exists, even though it contains no data as of yet. Therefore, the option "Open an Old File" must be used to enter new data or access the data within the file.

To use an "old" file,

1. Type O from the Main Menu, the screen will read:

```
OPEN AN OLD FILE NAME OF FILE? (LEAVE BLANK TO
RETURN TO DATA DISK)
```

2. If you had selected the OPEN FILE option accidentally, you would simply have to press RETURN.

   To enter data in the file you structured in Chapter Two, type ADDRESS BOOK and press RETURN. The screen will read:

```
(TESTING PRINTER)
INSERT DATA DISK
READY?
```

   Insert data disk and when ready, type R.

3. After a slight pause, the following will appear:

```
LOADING POINTERS
LOADING BLOCK MAP
INSERT PROGRAM DISK
READY?
```

The file structure (or format) is actually being loaded. Insert the program disk when told to do so and type R and the following menu will be displayed:

```
FILE MENU
VIEW DIR              F1    DIR FILE MAIN      F3
BATCH ENTRY           F6    MAIL LABELS        F5
REPORT WRITER         F7    CREATE SEQ         F2
FILE CALCULATIONS           ALPHA REORDER
                            ↑ RETURN
```

The **File Menu** is a list of the options available to you once a file is "open" or loaded into the Commodore 128. All functions which allow you to manipulate the data contained within a file are listed in the **File Menu.** Each function will be described and used in reference to the sample files used in this manual.

Note 3-1: The reversed letter at the start of each menu entry is all you need to type to select that particular option.

The directory of a disk can be thought of as the table of contents. To see just what is contained on a disk,

1. Type V from the **File Menu**. The screen will read:

```
INSERT DISK
READY?
```

2. Insert the disk whose directory you wish to see (in this case, the data disk on which you stored the format of the file **ADDRESS BOOK**). Type R when ready.

3. After a slight pause, the directory will be displayed. If you saved the format of **ADDRESS BOOK** to a blank disk, the following directory will be displayed:

```
0 "PFILE"     " 11 2A
2 "DB-ADDRESS BOOK" SEQ
646 BLOCKS FREE
READY?
```

When a directory is longer in length, you can halt the display. To do so, hit any key and the following options will be displayed:

```
continue, RETURN
```

You may type C to continue the display of the directory or to return to the **File Menu.**

If you do not stop the display, type R to return to the **File Menu.**

The option to view the contents of a disk is extremely useful when trying to locate a particular file. It may also be used for disks which contain files not created by **Flex File 128.**

The first line of the directory lists four items: the drive number of the displayed disk, the disk name and ID number (entered in step 16 of Chapter Two) and a number which indicates the ROM version of the disk drive used to format the disk. The last line of the directory contains the number remaining available blocks. Always check the directory if you are uncertain of remaining storage space; however, it will take many files or one enormous file to reach the capacity of the disk.

The directory may be used for finding format files whose names have been forgotten. All format files will begin with two letter code followed by a hyphen.

ML - Mail label format
RW - Report writer format
BA - Batch entry format
CA - Calculations

Only the portion of each file which contains its format will be shown on the directory of the disk. The data part is not shown at all. This explains why the total number of blocks used plus the available blocks do not equal the total block capacity of the disk.

DIRECT FILE MAINTENANCE

The most frequently used options for **Flex File 128** . Since you already loaded the format for **ADDRESS BOOK** when you opened the file, you can proceed to the file maintenance. To see a listing of the features involved in **FILE MAINTENANCE.**

1. Type D from the file menu. The screen will read:

```
INSERT PROGRAM DISK
READY?
```

If need be, insert the **Flex File 128** disk and type R.

2. The message **LOADING DIRECT** will come to the screen and you will be instructed to insert your data disk. Type R when ready.

3. After a slight pause, the following will display will appear:

```
MAXIMUM RECORDS: 30
MAXIMUM CHARACTERS/RECORDS: 127

ADD, REPL, CHANGE, DEL, NEXT, PREV, GOTO,
FIND BROWSE, KEY, USER, WIPE, LIMIT, SNAP,
RETURN
```

The limits given in the first lines of the display pertain to the file **ADDRESS BOOK** as structured in Chapter Two. The fifteen options are accessed by typing the first letter of its listing.

The list of options is initially confusing for some seem redundant. Each feature does have a particular purpose however, which will be clarified by the following examples:

Example 3-1 Adding a Record

With the structure of **ADDRESS BOOK** set, you are ready to add records. To do so,

1. Type A from the **Direct File Maintenance Menu** (also called DFM). The screen will read:

```
ADDING RECORD #1
FIRST NAME:
```

2. Type JOHN and press RETURN. The screen will read:

```
LAST NAME:
```

3. Type SMITH and press RETURN. The screen will read:

```
COMPANY NAME:
```

4. Type ABC COMPUTERS and press RETURN. The screen will read:

```
ADDRESS:
```

5. Type 987 OAK STREET and press RETURN. The screen will read:

CITY:

6. Type ASHBURN and press RETURN. The next line will read:

STATE:

7. Type NE and press RETURN. The screen will read:

ZIP:

8. Enter 87651 and press RETURN. The screen will read:

PHONE NUMBER

9. Type (712)234-1234 and press RETURN. The screen display will read:

CORRECTIONS? (Y/N)

As you can see, each title which you gave to a field acts as a prompt to eliminate confusion in data entry. Should you have entered anything incorrectly or if you wish to review your entries, type Y. Each field will be displayed with the answer you gave. If your answer is correct, press RETURN. The next field you entered will be displayed after each RETURN until the CORRECTIONS question appears. Type N to this question when you are done entering this record. The record will be written to the data disk (which should be in the drive) and displayed on the screen.

10. Enter several more records in the **ADDRESS BOOK** file, some with individual's home addresses and others with their business address. For home addresses, simply press RETURN when the prompt for COMPANY NAME appears. (Use this opportunity to create a file that will be of use later as you learn to use **Flex File 128**).

If you enter a record which contains more characters than were originally allocated to a record, the message REC TOO LARGE statement will appear instead of the CORRECTIONS? (Y/N) question. After the REC TOO LARGE message you are provided with the opportunity to reduce the characters used within the record. When the record is small enough, the CORRECTIONS questions will appear.

Note 3-2:

When records are immediately written to your data disk, (as they are in the above example), they are also ordered according to the key in which you are working. Unless you specified otherwise, the records are arranged according to key #1 (which, in step #11 of Chapter Two of the **ADDRESS BOOK** example, was set to field #2).

Example 3-2: Finding a Record

Many of the file maintenance functions require that a record be displayed before an option can be executed upon it. Records are arranged immediately upon entry according to a key: therefore, it's usually easier to use the **FIND** feature to locate and display a particular record.

To find and display John Smith's record,

1. Type F from the DFM menu. The question of LAST NAME? will appear.

2. Type SMITH and press RETURN. The screen will then display the question FIRST NAME?

3. Type JOHN and press RETURN. John Smith's record will then be displayed.

Example 3-3: Replicating a Record

There will be certain occasions when you need most (or all) of the information from one record copied into another. To see more clearly how to replicate records, return to the one record we have in common: John Smith.

Let's say you know two people at ABC COMPUTER and all information (with the exception of the name) is the same. You can replicate the file and just change the name. To do so, have John Smith's record displayed on the screen along with the **Direct File Maintenance Menu.**

1. Type R. The screen will display the following:

```
ADDING RECORD #X
FIRST NAME: JOHN
```

2. Directly over the name of JOHN type ANNE and press RETURN.

```
LAST NAME: SMITH
```

3. Type LEE over SMITH, pressing the space bar twice to erase the last two characters in the name Smith. Press RETURN. The remaining information is the same for Anne Lee and John Smith; therefore press RETURN when each field is displayed. The CORRECTIONS question will appear: if all is correct, type N and the most recent record, that of Anne Lee, will be displayed.

Example 3-4: Changing A Field

If the phone number at ABC Computers changed, you would want to update the records of both Lee and Smith.

1. With Lee's record on the screen, type C from the DFM menu. The screen will read:

```
CHANGE FIELD # X
WHICH FIELD? (ENTER 0 FOR ALL)
```

2. Type 8 (the field in which the phone number is entered). Press RETURN.

3. The phone number will be displayed with a cursor blinking at the start of it. Type (712)234-5400 directly over the old number. Press RETURN.

4. To do the same for John Smith, type F to find his record (following the procedure outlined in Example 3-2 above). Then, with John Smith's record displayed on the screen, type C, then 8 (for the eighth field) and also change his phone number to (712) 234-5400.

Example 3-5: Deleting a Record

As with many of the file maintenance functions, the file you wish to work on must be displayed (with the exception of John Smith's or Anne Lee's, of course!), use the FIND option to locate the file. With the file displayed on the screen:

1. Type D. The screen will read:

```
DELETE REC #x? (Y/N)
```

2. Type Y to delete: type N to preserve the record.

MOVING AMIDST RECORDS

The next five functions in the **Direct File Maintenance Menu** are used for moving through the records of a file and are, for the most part self-

explanatory. A brief explanation of each follows.

NEXT: To move from the record currently displayed to the next record in in the order in which they are arranged.

Type N and the next record (according to the order of the key you are in) will appear on the screen.

PREV: To move in the opposite direction and back up to the previous record,

Type P and the previous record will appear.

GO TO: To go immediately to a record of a specific number,

Type G and type the number of the record you wish to see displayed.

FIND: Refer to Example 3-2.

BROWSE: To scan the records according to a particular field,

Type B and type the number of the field you wish to use for scanning the records. Press RETURN. If you typed 3, then the third field of each record would be displayed. To stop the display, press any key and the DFM menu will appear.

Example 3-6: Reordering a File by a Different Key

The **ADDRESS BOOK** file is currently ordered by the first key which you established as last name, first name, in Example 3-1. To order your address book by zip code:

1. Type K from the DFM menu. The screen will read:

```
1 LAST NAME: FIRST NAME
2 ZIP
WHICH KEY DO YOU WANT TO USE?
```

2. Type 2 and press RETURN. The records of the file will be arranged according to the zip codes.

Example 3-7: Wiping Out Records

The **DELETE** function, outlined in Example 3-5, explained how to eliminate one record from the file. The **WIPE** option goes one step further and will eliminate not only one record, but all records or the entire file.

To "wipe" out the file:

1. Type W from DFM menu. The following will appear on the screen:

```
WIPE:
ONE RECORD
ALL RECORDS
ENTIRE BOOK
RETURN
```

Wiping one record eliminates only one record. Wiping all records eliminates all data, but leaves the format of the file. Wiping the entire file erases data and format of the entire file. RECOVER BOOK allows you to access the data in files which are too large or which were never properly closed.

2. Type the letter which corresponds to your choice. Press RETURN. The DFM menu will reappear.

Example 3-8: Limiting Field Lengths:

The **LIMIT** command allows you to set a specific character limit for each field within the records. This feature is ideal for entry of data which will later be printed in a mailing label or columnar report format. Once the field limits have been set, the **ADD** command will not allow you to enter fields which exceed the maximums established. If you attempt to enter a field which is too long, an **ERROR** message will result and you will be asked to re-enter the information in what field.

To limit the characters in the **ZIP CODE** field of the **ADDRESS BOOK** file:

1. Type L from the DFM menu. The screen will read:

```
WHICH FIELD DO YOU WANT TO LIMIT?
(0 FOR NONE)
```

2. Type 7 and press RETURN. The screen will read:

```
MAX NO. OF CHARACTERS ALLOWED?
79
```

3. The current field limit will be displayed under the maximum, (if no limit has been previously set, the limit will be 79 characters). Type 5 to limit the ZIP CODE field to five characters. Press the space bar to eliminate the last of 79 which will remain. Then press RETURN. The DFM menu will reappear.

Example 3-9: Snapshots of Records

It is possible with **Flex File 128** to print (to the printer) the record which was most recently displayed on the screen. To do so:

1. Select the record to print with the **GOTO** or **FIND** options as explained before. When the record you wish to print is displayed on the screen, turn on your printer and be certain the paper supply is ready.

2. Type S from the DFM menu. The record will immediately print to the printer.

RETURNING TO THE MAIN MENU

To return to the **Main Menu**, simply type ↑ from the DFM menu. The screen display will read:

```
INSERT PROGRAM DISK
READY?
```

Remove your data disk, insert the program disk and type R. The **Main Menu** will appear on the screen.

USER

To exit to a **USER** definded function, simply type "U" from the **DFM MENU**. This function is useful only if you have a special operation you want to program in BASIC.

The screen display will read:

```
INSERT USER PROGRAM IN DRIVE 8:0
```

When this is done the example (print a record) will be displayed. The program is called **USER** and your new program should have the same name. There cannot be more than one **USER** program on the program disk, as only the first one will be used. Appendix C, Program Variables, will be useful in writing your programs. You may even find the example program useful for printing an invoice, purchase order, or inventory record. Use your imagination.

Chapter 4 **Batch Entry**

Each record added to a file (as in Chapter Three) is immediately written to a random file on the data disk. When entering files of many records, the individual saving process can slow the entry of data to the point where it becomes frustrating.

BATCH entry, on the other hand, stores the records entered in a temporary sequential file called **BATCH**, thus eliminating the time for saving after each record. When the command to **MERGE** is given, the contents of the sequential file are "dumped" and organized in a random file.

Example 4-1:

To enter data in the **Batch Entry** mode of **Flex File 128**:

1. Type B from the File Menu. The screen will read:

```
(LOADING BATCH ENTRY)
```

and after a pause,

```
INSERT DATA DISK
READY?
```

2. Insert your data disk. Type R and the screen will read:

```
LOAD FORMAT
CREATE OR CHANGE FORMAT
SAVE FORMAT
ENTER DATA
↑RETURN TO MAIN MENU
```

CREATE, CHANGE, INSPECT, FORMAT

3. A format for entry of data must be established to speed the entry process. Many different batch entry formats are possible within each file. Your first format is already determined according to the record structure: it includes all fields and is labelled with the same name as the file itself. To set an alternate format of batch entry for non-business entries, type C for **CHANGE or CREATE FORMAT.**

   The screen will read:

```
FIELD #1 = FIRST NAME
WILL YOU NEED TO ENTER THIS FIELD?
Y
```

4. You want the format of your batch entry to include the first field; therefore, press RETURN. You also want the last name included, so press RETURN (which answers "yes" to the question displayed).

5. When the screen reads:

```
FIELD #3 = COMPANY NAME
WILL YOU NEED TO ENTER THIS FIELD?
```

   Type N and press RETURN. After each successive field is displayed, press RETURN. The **BATCH ENTRY** menu will appear.

Once the format has been changed or created, it can be immediately used. However, it will be easier in the future if you save and label any formats which vary from the original structure. This eliminates re-creating the differing format with each use of the **BATCH ENTRY MODE.**

SAVE FORMAT

6. Type S from the **BATCH ENTRY** menu. The screen will read:

```
SAVE FORMAT
NAME OF FORMAT:
ADDRESS BOOK
```

7. Type PERSONAL (implying non-business associates) directly over the format title **ADDRESS BOOK.** Then press the space bar as needed to eliminates the extra letters of the original name. Press RETURN. The format (without field #3: Company Name) will be saved with the format name of PERSONAL. A batch entry format named **ADDRESS BOOK** which includes all fields already exists. You have created a second **BATCH ENTRY** format called PERSONAL.

LOAD FORMAT

At this point, the **Batch Entry** format you need is loaded because it was just created. If you wanted to use an existing format, you would type L from the **Batch Entry** menu and enter the desired format name.

Entering Data

8. To enter data within the PERSONAL format of the **ADDRESS BOOK** file, type E from the **BATCH ENTRY** menu. The screen will say:

```
ADD, REPLICATE, MERGE
```

9. Type A and entry of each field will be prompted just as in the regular entry mode.

Type R and the last record will be copied. Each field will be displayed. To change any field, type over the existing entry; if the field is correct, press RETURN.

10. When you are finished in the **BATCH ENTRY** mode and want all records combined in order within the random file, type M **(MERGE)** from the three options listed under **ENTER DATA.**

IMPORTANT, IF YOU DO NOT MERGE THE BATCH ENTRIES WITH THE EXISTING FILE, THEY WILL BE LOST WHEN YOU RETURN FROM THE BATCH ENTRY MENU TO THE MAIN MENU.

After typing M, the screen will read:

```
ARE YOU SURE? (Y/N)
```

11. Type Y. The screen will note the addition of each new record to the file. When all new records have been added and ordered, the **BATCH ENTRY** menu will reappear.

12. To exit the **Batch Entry** mode and menu, type † from the **Batch Entry Menu:** insert the **Flex File 128** disk, type R and the **Main Menu** will return to the screen.

Chapter 5 **MAIL LABELS**

Flex File 128 allows users to take existing records, select certain fields and print those fields in the form of mailing labels. To print the first and last names, company name, adddress, city, state and zip code of each entry in the **ADDRESS BOOK file,**

1. Type M from the Main Menu. After inserting the correct disks when prompted to do so, the screen will read:

```
MAILING LABELS
LOAD FORMAT
CREATE, CHANGE, INSPECT FORMAT
SAVE FORMAT
PRINT LABELS
↑ RETURN TO MAIN MENU
```

Mailing labels, much like batch-entered records, require a format. The format of a mail label includes the selection of fields and the arrangement of them. The following steps show how to establish a format and print mail labels. **Create, Change, Inspect Format**

2. Type C from the Mail Label menu. The screen will read:

```
CHANGE FORMAT
FIELD ARRANGEMENT
SELECTION
MISC
↑ RETURN TO MAIL LABEL MENU
```

3. Type F for arrangement of fields. The screen will read:

```
HOW MANY PRINTED LINES PER LABEL?
```

4. Type 4 and press RETURN.

5. The program will respond:

```
NUMBER OF EMPTY LINES BETWEEN LABELS?
```

This is dependent upon the size of your mailing labels. Enter 0 to maximize space. Press RETURN.

6. The program will then list all field titles, their corresponding numbers and ask:

```
HOW MANY FIELDS TO BE PRINTED ON LINE 1?
```

Type 2 and press RETURN.

7. The screen will read:

```
CONSTANT FIELD, ENTER ' , THEN CHARACTERS,
THEN '
```

It is possible to have information printed within all labels as constants. This can be done at any point in the mailing label. Characters which are entered as constants must be preceded and followed by a single quote symbol, ie. ' in single quotations. In the **ADDRESS BOOK** file, there is no data which is repeated in every file; thus, there is no need for a constant. However, if you were doing a mailing to all people of one company or all people within one zip code area, you could set the appropriate field as a constant. In this instance, you want field #1 to be the first field in line #1. Therefore, type 1 and press RETURN.

8. The screen will read:

```
FIELD # OF 2ND FIELD IN LINE?
```

Type 2 and press RETURN.

9. The process of arrangement will then repeat for each of the remaining three lines. When you have entered the specifics for each line, the arrangement of the fields will be displayed. In this particular example, the following arrangement will result:

```
ARRANGEMENT:
FIRST NAME LAST NAME
COMPANY NAME
ADDRESS
CITY STATE ZIP

HOW MANY LABELS ACROSS?
```

10. Enter the number of labels across each row of your mailing labels. (The minimum is one; the maximum is 20). Press RETURN.

11. The screen display will read:

```
COLUMN POSITION LABEL NO. 1
```

If your printer has an 80-character per line format and you are printing three labels across, you must find the starting position of each label. On an 80-character printer, you would start the first label at column 1, the second at column 27, and the third at 53 (since 80 divided by three is approximately 27).

Therefore, type 1 (not zero) and press RETURN.

In response to the next question, type 27 and press RETURN.

Finally, type 53 and press RETURN. You have now set the starting points of each column of labels. The **CHANGE FORMAT** menu will return.

12. After arranging the fields for printing, the option exists to **SELECT** certain fields for printing. Chapter Seven contains a complete explanation of selection. In this instance, there's no need to eliminate any records; therefore, no need to use the selection option.

13. Miscellaneous printer and other setup instructions are covered on page 6.8 in the **Report Writer** section. You should check these if the default settings do not print as you wish.

14. With the fields arranged, you are set to leave the **CHANGE FORMAT** menu. Type ↑ and the **MAIL LABEL** menu will appear.

SAVE FORMAT

15. Next, to save the newly-created format, type S to select the **SAVE FORMAT OPTION.** The screen will read:

```
SAVE FORMAT
NAME OF FORMAT:
ADDRESS BOOK
```

As with the batch entry format, the format uses, by default, the file name. To change the format name, type directly over the words **ADDRESS BOOK** and press RETURN. Or, to retain the name **ADDRESS BOOK** for the format, press RETURN.

YOU MAY SAVE AS MANY FORMATS AS YOU WISH FOR PRINTING MAIL LABELS FOR EACH FILE, PROVIDED EACH IS SAVED WITH A DIFFERENT NAME. Should you save a format with the same name as an existing format, the original format is erased and replaced by the newer version.

LOAD FORMAT

As in **BATCH ENTRY**, you can load formats which were previously created. To do so, type L from the **MAIL LABEL** menu, enter the format name and press RETURN.

PRINT LABELS

16. With a format created and saved, you are ready to print labels. With your printer on, align the label paper so that the position of the first line to be printed is directly under the printer head. Type P from the **MAIL LABEL** menu. The screen will read:

```
DO YOU WISH TO REPEAT THE SAME RECORD?
```

17. This option is provided should you want to repeat one record as a mailing label several times. For example, if you wanted to create return address labels with your name and address on them, you would answer Y and press RETURN.

    If you answer Y, you will be asked which record you would like to repeat. Type the current record number; printing will commence and will continue until you type S to stop the printing process.

    If you press RETURN answering "no", the screen will read:

```
FIRST RECORD #?
```

18. Type the number of the first record to be printed and press RETURN. The screen will read:

```
LAST RECORD #?
```

19. Type the number of the last record and press RETURN. The default answers will always correspond to the first and last record numbers. To print all records in the file as labels, press RETURN twice. The screen will read:

```
CORRECTIONS? (Y/N)
```

20. Type N if your previous three responses were correct. Press RETURN and the screen will read:

```
PAUSE
CONTINUE
STOP
```

and the printing will start. While the labels are being printed, type P to pause and C to continue, or S to stop the printing procedure entirely. When the printing is finished, the **MAIL LABEL** menu will return to the screen. Type **t** to return to the **File Menu.**

Chapter Six **REPORT WRITING**

To clearly present the data within your files **Flex File 128** is equipped with a report writing feature. This option allows you to select and arrange certain records for printing.

The **Report Writer** option follows a procedure in preparation much like batch entry and mail label printing.

The procedure involves three steps:

1. *create* a format
2. *save* a format
3. *print* the file in a report format.

OR

1. *load* a format
2. *change or inspect* an existing format
3. *print* the file in a report format

As mentioned in Chapter One, the file **ADDRESS BOOK** does not provide a suitable example for all of **Flex File 128's** features. At this point, you will need to use the file **INV** which is included on your program disk.

IMPORTANT: THIS IS THE ONLY INSTANCE IN WHICH THE FILE UPON WHICH YOU ARE WORKING WILL BE ON THE SAME DISK AS FLEX FILE 128. THUS YOUR DATA DISK AND THE PROGRAM DISK ARE THE SAME. LOAD THE FILE FROM THE PROGRAM DISK.

CREATE, CHANGE, INSPECT FORMAT

Welcome to the Tiny Tots Toy Store, of which you are the proud owner. The previous owner left you a Commodore 128 and a copy of **Flex File 128** as for the store on a data disk.

To understand the method of inventory:

1. Type O from the **Main Menu** to **OPEN AN OLD FILE.** Leave the program disk in the disk drive.

2. Type INV and press RETURN.

3. When the **File Menu** appears, type D.

4. When the **Direct File Maintenance Menu** appears, type N to view the first record. See sample display below:

KEY #1		Record #1	
1.	TYPE:	KITE	(kite or toy)
2.	SUPPLIER	25	(code number of supplier)
3.	PROD. NO.	PARACHUTE	(brand name or product)
4.	PRICE:	49.50	(retail price)
5.	START:	4	(inventory at start of month)
6.	ON HAND:	1	(current inventory)
7.	REORDER	1	(minimum inventory allowed)

With an understanding of how each record of the file is set up, you can continue on the **REPORT WRITER** feature.

5. Type ↑ to return to the **FILE MENU.**

6. Type R to select the **REPORT WRITER** feature.

Example 6-1:

The report you are about to print will contain all information for all records ie. a complete inventory report of your new acquisition.

1. After selecting **REPORT WRITER** from the **FILE MENU**, the following menu will appear:

```
REPORT WRITER
LOAD FORMAT
CHANGE, CREATE, INSPECT FORMAT
SAVE FORMAT
PRINT FORMAT
↑RETURN TO MAIN MENU
```

2. To create a format for printing a report with the INV file, type C and the following will be displayed:

```
CHANGE FORMAT
HEADER LINES
NUMBER OF COLUMNS
DESCRIPTION OF COLUMNS
SELECTION OF RECORD CRITERIA
CALCULATED COLUMNS INFO
MISC
↑RETURN TO REPORT WRITER
```

HEADER LINES

Header lines of text that are centered at the top of the page. Each report has a maximum of 20 header lines. To header the INV report:

3. Type H on the **CHANGE FORMAT** menu. The screen will read:

```
HOW MANY HEADER LINES DO YOU WANT?
```

4. Type 3 (or any other number if you prefer more) and press RETURN. The program will reply:

ENTER HEADER LINE #1:

5. Type TINY TOTS STORE and press RETURN.

   For the second header line, type COMPLETE INVENTORY and press RETURN. For header #3, type AS OF (today's date) and press RETURN. When the last header line has been entered, the CHANGE FORMAT menu will reappear.

NUMBER OF COLUMNS

Once the headers (or titles) to your report have been set, the number of columns must be determined. There is a maximum of 20 columns.

6. Type N from the **CHANGE FORMAT** menu. The screen will read:

HOW MANY PRINTED COLUMNS DO YOU WANT?

7. Type 7 (one for each field). Press RETURN.

DESCRIPTION OF COLUMNS

To enter a description of a column is to enter its title and the source of the data which will be printed in that column. Here, in the **INV** file, each column will actually be a field from the records of the file. To describe all seven of the **INV** file's columns,

8. Type D from the **CHANGE FORMAT** menu. Across the screen will appear:

```
COLUMNS
1/2/3/4/5/6/7/
WHICH COLUMN DO YOU WANT TO DESCRIBE?
```

9. Starting with column #1, press RETURN (#1 is the default answer). The titles of fields of the random file **INV** are displayed and the screen will will read:

```
LOAD COLUMN #1 FROM RANDOM FIELD #?
```

10. Type 1 and press RETURN. The screen will read:

```
TITLE OF COLUMN #1?
(USE / FOR TWO LINES)
```

11. Step #9 gave the contents of column #1. Now, to give the title, type TYPE and press RETURN. The width of a column (and the room available for a title) is selected in step #11. Therefore, if you know your column will be narrow and the title long, use "/" to break the title at the desired places to fit the column width.

The screen will read:

```
NO. OF CHARACTERS IN COL #1?
```

12. Type 4 (since type is either toy or kite). (If you select four characters for a column, then the title space is also four characters). Press RETURN. The program will ask:

IS THIS A NUMERIC COLUMN?

An answer of N (and RETURN) should be entered for any column which will contain letters of punctuation (other than decimal points). With a negative answer, the **CHANGE FORMAT** menu will reappear.

Field #1, 2, and 3 of **INV** are non-numeric. However, fields #4-7 are numeric and when you are describing them for the report, type Y to the last question. The screen would then read:

NUMERIC JUSTIFY?

Numeric justify means that the columns of numbers will be aligned according to the decimal point. Non-numeric would align the according to the first character.

Type Y if you want the numbers align according to the decimal and press RETURN. (Otherwise, type N and press RETURN; the numbers will be aligned according to the left-most characters).

Illustration 6-1:

JUSTIFIED (with 2 places)	Not justified:
0.07	5.678
12345.67	1000.89
.00	.09
3.98	2.0

The screen will then read:

PLACES TO THE RIGHT OF THE DECIMAL POINT?

Type 2 in the INV file because the smallest demonination with which you will be dealing is 15 cents.

Press RETURN.

The next two questions will be:

TOTAL AT END?

and then

AVERAGE AT END?

These questions are asked in the description of all numeric columns. An answer of Y will result in the TOTAL and AVERAGE of the column being printed at the end of the report. With the completion of the description of a column, the **CHANGE FORMAT** menu will reappear. Now repeat steps #8-12 for each of the six remaining columns of the file.

SELECTION OF RECORDS

Chapter Seven explains in detail how select records for report writing.

CALCULATED COLUMNS INFO

This feature allows you to change the numeric values of the columns of a report. As the INV report format is set thus far, there is no column which indicates the total value of the goods on hand. Therefore, add an eighth column to the report which will contain

the total value of goods-on-hand by typing N (from the **Change Format Menu**) to change the number of columns; then type 8 and press RETURN.

Type C from the **CHANGE FORMAT** menu. The screen will read:

```
HOW MANY OPERATIONS DO YOU WANT TO PER-
FORM?
```

Up to 20 calculations can be performed per record; in this example only one operation in needed.

14. Type 1 and press RETURN. An explanation will appear on the screen listing **Flex File 128's** mathematical and functions and the following:

```
OPERATION #1:
```

15. Type C6 = C4 * C5 and press RETURN. (For further explanations of calculating with **Flex File 128**, refer to Chapter Eight).

MISCELLANEOUS ITEMS

Under this heading is a group of miscellaneous information related only by the fact that they are essential to successful report writing.

16. Type M from the **CHANGE FORMAT** menu. The screen will read:

```
KEYS:
1 TYPE: SUPPLIER: PRODUCT NAME
2 PRODUCT NAME
WHICH KEY?
```

Select the keyed order in which you want your report printed.

A listing of inventory would be more useful if grouped according to product type; therefore, type 1 to key your INV report according to type. Press RETURN.

The screen will read:

```
DEVICE NO? (4=MOST PRINTERS, 3=SCREEN,
8=DISK FILE, 1=CASSETTE)
```

17. You can print a report to either the printer or the screen. A sequential file can also be created and saved to either the disk drive or datasette. If you choose to store the report as a sequential file, refer to Chapter Ten; you will also not see some of following questions. Instead you will be asked to input the name of the sequential file which you want to create.

    If you are printing, type 4 and press RETURN.

18. The program then asks:

```
HOW MANY SPACES DO YOU WANT TO INDENT
COLUMN #1?
```

    The program is actually looking for the left margin. If you enter 0, the printing of the first column will start at the far left side of the printer. If you enter 10, all columns will be moved 10 spaces to the right. You can also center a column part of a report with this feature. In this example, enter the left margin column and press RETURN.

19. The screen will read:

```
HOW MANY CHARACTERS ACROSS DOES YOUR
PRINTER PRINT?
```

    Type the character width of your printer and press RETURN.

20. The program will prompt:

```
LINES PER PAGE?
```

If you are using 8 1/2 x 11" paper with normal spacing, then you may have a maximum of 66 lines per page. If using another size paper, enter the correct number of lines and press RETURN. If an incorrect number is entered, the printing of the pages will be incorrect.

21. The screen will then display:

```
PAUSE AFTER EACH PAGE?
```

A pause after each page will stop the printer after each page until you type C to continue. Some friction feed printers may require a pause in printing after each page to re-adjust the paper feed.

Enter N or Y and press RETURN.

22. The screen will read:

```
FIRST PAGE NUMBER?
```

Enter 0 if you do not want the pages numbered.

Enter 1 to start printing at page 1.

Enter any number to start printing on a specific page other than 1. Press RETURN.

23. The screen will read:

NUMBER OF CHARACTERS SENT TO PRINTER?

Many printers will print different faces under software controls; i.e., bold, expanded, etc. Each variance from the norm requires that a character be "sent" to the printer. Your printer's manual should list the characters recognized by your printer and their corresponding ASCII values. Enter the number of "special" characters to be sent to the printer and press RETURN.

You will then be asked to enter the ACSII value of each character. When you finish,

24. The screen will read:

HOW MANY LEVELS OF SUBTOTALS?

Refer to Chapter Nine for more information or subtotals within a report. Otherwise, press RETURN to enter zero.

If you do ask for subtotals, the next question will read:

SEPARATE REPORT FOR EACH SUBTOTAL?

Entering Y will initiate the printing of a new report each time the contents of the key column change.

25. The program will ask:

CHARACTERS PER SELECTION CODE?

Refer to Chapter Seven for information on selection codes. If you are not using codes, your response to this question will not affect

the report.

26. The final question in the MISC (but lengthy!) section will read:

```
ASCENDING ORDER? (N=DESCENDING ORDER)
```

In most cases, you will need files printed in ascending order; alphabetically from A to Z and numerically from lowest to highest. Some instances (such as student's grade averages) would be more appropriately printed in descending order.

Press RETURN to print in ascending order.

Type N and press RETURN to print descending order.

27. The screen will read:

```
CORRECTIONS? (Y/N)
```

Type Y to review your previous 15 answers. Type N to finish. The **CHANGE FORMAT** menu will reappear. Type ↑ to return to the **REPORT WRITER** menu.

SAVE FORMAT

28. With the **REPORT WRITER** menu on the screen, type S to save the format. The following will appear on the screen:

```
NAME OF FORMAT?
INV
```

As in batch entry and mail labels, the file name becomes the default answer for the format name. Press RETURN to use the default answer or rename the format as necessary.

Print Report

29. Align the printer head with the first line of your paper. Type P from the **REPORT WRITER** menu. The screen will read:

```
START AT RECORD NO:
END AT RECORD NO:
```

These questions allow you to print groups of consecutive records within the file. The default answers, (press RETURN twice) are set so the entire file will print.

30. After answering these questions, there is a chance to make corrections. A negative answer to the question of CORRECTIONS? (Y/N) and you are ready to print.

With the data disk in the drive, the following menu will appear when printing is in progress:

```
PAUSE
CONTINUE PRINTING
STOP PRINTING
(PRESS KEY ONCE, THEN WAIT)
```

P can be pressed to temporarily halt the printing process. C will resume the printing where it left off. S stops the printing process entirely and returns to the File menu.

IMPORTANT: IF YOU HAVE ENTERED AN INCORRECT PRINTER DEVICE NUMBER, IF YOUR PRINTER IS TURNED OFF, OR IF YOUR PRINTER IS INCORRECTLY ATTACHED A "DEVICE NOT PRESENT" ERROR MESSAGE WILL APPEAR, TURN THE COMMODORE 128 OFF AND START THE PROCESS AGAIN. TO AVOID THE POSSIBILITY OF THIS MISHAP, ALWAYS SAVE A FORMAT BEFORE PRINTING.

LOAD FORMAT

If you had created and saved a report format earlier, it could be loaded for printing by typing L form the **REPORT WRITER** menu and entering the name of the format.

After printing a report, inspect it for errors. A common mistake is trying to cram too much information on a line. The program attempts to compensate as much as possible.

Chapter 7: SELECTION OF RECORDS

Both the **REPORT WRITER** and **MAIL LABEL** options of **Flex File 128** can print selective records. Record selection is often helpful; an accounts receivable clerk may only want to see those who have more than $1000.00 outstanding, a teacher may only want to see those students whose current averages have dipped dangerously low; or you may wish to print, from your **ADDRESS BOOK** file, only the address of non-business associates.

As in the example for **REPORT WRITER**, you will use the **INV** file of the Tiny Tots Toy Store which is on your program disk. This file has been included to provide a common basis for the following examples without having you enter a complete file of information which will be virtually useless to you later on.

CREATING SELECTION STATEMENTS

Example 7-1:

To access the TINY TOTS TOY STORE inventory,

1. Open **INV** file by typing O from the **Main Menu.**
2. Type **INV** and press RETURN.
3. Type Y and press RETURN since the file **INV** is located on the program disk.
4. When the **File Menu** appears, type R for **REPORT WRITER.**
5. Type L and press RETURN to load the **INV** format you created in Chapter Six. With the format loaded,
6. Type C to change the **INV** format to include selection of certain items.
7. Type S for record selection criteria. The screen will read:

```
DO YOU WISH TO SELECT CERTAIN RECORDS?
```

8. Press RETURN (since "yes" is the default answer). The screen will then display the following.

```
SELECT CHANGE FIELDS

1.    TYPE
2.    SUPPLIER
3.    PRODUCT NAME
4.    PRICE
5.    START
6.    ON HAND
7.    REORDER

YOUR SELECTION STATEMENT:
IF ( .....
ENTER FIELD NO.
```

The file contains seven pieces of pertinent information about each product in the toy store inventory. You are interested in printing a list of all kites you carry in stock. To select certain records, a selection statement must be written. A selection statement is made up of four principal parts and takes the following form:

IF (field name) <equality> (argument) <connector>

Where the screen above asks for a field number, you need to input the field which will be used in the selection statement. In this example, field #1 (the type of toy) will be used. Therefore,

9. Type 1 (for field #1) and press RETURN. The screen will then read:

```
EQUALITY TYPES
1 EQUALS                  (field identical to argument, character for character)
2 LESS-THAN               (less than numerically)
3 GREATER-THAN            (greater than numerically)
4 PRECEDES                (precedes alphabetically)
5 FOLLOWS                 (follows alphabetically)
6 NO-EQUAL-TO             (not identical to)
7 PATTERN-MATCHES         (? in argument is wild character, * is wild ending)
8 SHARES-CODE-WITH        (any 3-character code identical to any code in argument)
9 GREATER-THAN-FIELD#     (for numerical comparison of two fields)

YOUR SELECTION STATEMENT IS:
IF (TYPE .....
ENTER EQUALITY TYPE NO.
```

Notice that your selection statement has been updated with this display to include your selection of TYPE as the field to be used. The program now needs to know which qualifying equality phase you need to use in the selection statement.

What you are trying to say in print is that if the information in field #1 (type) is KITE then print that record. The equality phase which best says that is EQUAL (#1). Therefore,

10. Type 1 and press RETURN. The display will then read:

```
ARGUMENT CAN BE ALPHA-NUM STRING.
OUR SELECTION STATEMENT IS:
IF (TYPE EQUALS...
ENTER ARGUMENT:
```

You want records whose type reads KITE to be printed. Therefore, type KITE for the argument and press RETURN.

11. The screen will read:

```
LOGICAL CONNECTIONS:

1 AND
2 ) OR (
3 ) THEN PRINT

YOUR SELECTION STATEMENT:
IF (TYPE EQUALS KITE...
ENTER CONNECTION NO:
```

Again, the selection statement has been updated to show your three choices for the parts of the selection statement. Since you want the records whose type is KITE to print, you need to type 3 and press RETURN.

12. The program will tell you:

```
YOUR SELECTION STATEMENT READS:
IF (TYPE EQUALS KITE) THEN PRINT.
CORRECTIONS? (Y/N)
```

If the selection statement reads correctly, type N (to correct any part of the statement, type Y and press RETURN. The default answers will be those just entered. Correct any if necessary).

13. With the selection written, you can inspect the other parts of the format which have been pre-set in the sample file **INV**. (The only area which has yet to be explained is Calculated Column info; see Chapter Eight. For the information on the other parts of the format, refer to Chapter Two).

14. Return to the **REPORT WRITER** menu from the **CHANGE FORMAT** menu by typing ↑

SAVE FORMAT

15. Save the format (including the Selection Statement) before printing by typing S. The screen will read:

```
NAME OF FORMAT:
INV
```

16. Rename the newly created format by typing KITE LIST directly over the the word **INV**. Press RETURN.

PRINT FORMAT

17. To print the **INV** file according to specifications of the KITE the list, type **P** from the **REPORT WRITER** menu.

18. The screen will read:

```
START AT RECORD NO:
1
END AT RECORD NO:
14
```

Press RETURN twice since you want all records to be printed. After you have instructed the program to print all records, the selection statement will insure that only those with the specified will be printed.

19. Type N when there are no corrections to be made. The printing menu will appear, listing instructions to halt the printing process.

The **REPORT WRITER** menu will reappear when the printing of the report is done.

EXAMPLES OF SELECTION STATEMENTS

Example 7-1 provided one sample selection statement but obviously, with nine equality phrases and three connectors, there are countless possible combinations. Up to 20 selection criteria can be joined using the connectors and equality phases. The following sample statements are titled with equality phrase and connectors they use and will illustrate (using the fields of files **INV** and **ADDRESS BOOK**) just a few of **Flex File 128's** capabilities.

Example 7-2: *GREATER THAN*

To print the records of those items whose price was greater than $1.00, the selection statement would read:

IF (PRICE GREATER-THAN 1.00) THEN PRINT.

Example 7-3: *EQUALS: AND: GREATER-THAN*

To print the records of all kites that cost more than $1.00, the selection statement would be:

IF (TYPE EQUALS KITE AND PRICE GREATER-THAN 1.00) THEN PRINT.

Example 7-4: *PATTERN-MATCHES: WITH WILD CHARACTER*

To print mailing labels for all those whose name starts with "S", your selection statement would be:

IF (LAST NAME PATTERN-MATCHES S*) THEN PRINT.

Example 7-5: *PATTERN-MATCHES: OR*

If you were doing a mailing for just metropolitan New York and Washington, D.C. according to zip codes that started with 100- or 200-. Therefore, the statement would read:

IF (ZIP PATTERN-MATCHES 100*) or (ZIP PATTERN-MATCHES 200*) THEN PRINT.

Example 7-6: *GREATER-THAN-FIELD*

To print a list of all items (in **INV**) which have dropped below the reorder point, you would want to compare the two fields of each record. This essentially allows the argument portion of the selection statement to be relative to each record for comparison. To print all items whose supplies have dropped below the reorder point, the selection statement would be:

IF (REORDER POINT GREATER-THAN-FIELD #4) THEN PRINT.

The following examples do not refer specifically to the **INV** or **ADDRESS BOOK** files mentioned, but show other uses for the equality phrases.

Example 7-7: *FOLLOWS: AND PRECEDES*

If you had a field titled DATE and wanted to isolate all records from April of 1979, your selection statement would read:

IF (DATE FOLLOWS 79/03/31 AND DATE PRECEDES 79/05/01) THEN PRINT.

If you had a field for dates and could foresee using the field in a selection statement such as the one above, the dates must be entered in the above format. The selection statement is comparing the dates alphabetically and MUST do so because of the slashes (/) used to separate the parts of the date. Each part of the date must be a two-digit number; thus all dates take the form of YEAR/MONTH/DAY as 58/03/16 for March 16, 1958.

Example 7-8: *SHARES-CODE-WITH*

It is often helpful to use a TYPE category when creating a file which contains different, yet related records. The **ADDRESS FILE** of a small business owner might contain a type category to separate customers, prospective customers, distributors and personal friends. If this was done, a three-digit code would be assigned to each entry; CU-,PC-,DI-, and PF-, respectively. It is strongly suggested that you use a dash as the third character of your code; this makes listing the codes in a string much easier.

To print only the address of those people who are customers and prospective customers, the selection statement would read:

IF (TYPE SHARES-CODE-WITH CU-PC) THEN PRINT.

This statement is based on the format question of **Flex File 128** which asks "NUMBER OF CHARACTERS PER CODE?"; codes can be up to 10 characters long. Essentially the statement says that if the TYPE has ("shares") any of the codes listed in the statement (CU- or PC-) then that record should be printed.

Example 7-9: *PATTERN-MATCHES WITH WILD CARD CHARACTER*

If you were using an inventory file which contained a 3 digit CODE field, and wanted to print all records whose code started with the number 4 and ended with the number 9, the selection statement would read:

IF (CODE PATTERN-MATCHES 4?9) THEN PRINT.

This concludes the selection of record section of **File File 128.** Both the **REPORT WRITER** and **MAIL LABEL** features of **Flex File 128** can utilize this function to greatly expand their usefulness.

Chapter 8: FILE CALCULATIONS

There will be times when you may wish to change the value of a certain field in each record of a file. If the change can be expressed as a mathematical equation, the **Flex File 128's** calculation mode can make these changes automatically.

The **FILE CALCULATIONS** option is similar to the calculation feature of the **REPORT WRITER** except that the calculations will change the contents of the field of each record instead of changing the values in the columns of a report. In the **REPORT WRITER**, the C was used for columns; here, the letter F will precede the number of each field used in an equation.

Example 8-1:

To add Column 2 and Column 3 and place the total in Column 4 in the **REPORT WRITER** function, you would enter:

C4 = C2 + C3

Whereas to add Fields 2 and 3 and place the total in Field 4 with the **FILE CALCULATIONS** feature, you would enter:

F4 = F2 + F3

When writing equations for **Flex File 128**, the following rules apply:

- Each item (numeral or operator) in the equation must be separated from the other items by a space.
- If general, it is more convenient to calculate while printing a report than to calculate, then print.

The following chart lists the math operations that can be executed by the **FILE CALCULATIONS** feature. The same operations can also be used within the **Calculated Columns** option of the **REPORT WRITER**, substituting "C" for "F" as the initial letter of each variable.

OPERATIONS STATEMENTS
(Flex File 128 Equations)

Equation	Meaning
F2 = F3	The value of field #3 should be placed in field #2.

F2 = F3 + F4	The sum of field #3 and field #4 should be placed in field #2.
F2 = F3 - F4	Field #4 is subtracted from field #3 and the difference is placed in field #2.
F2 = F3 * F4	Field #2 will equal the product of field #3 and #4.
F2 = F3 / F4	Field #2 will equal the quotient of field #3 and field #4.
F2 = F3 ^F4	Field #2 will equal field #3 to the power of field #4.
F2 = LOG F4	Field #2 will equal the natural log of field #4.
F2 = SIN F4	Field #2 will equal the sin of field #4 when expressed in radians.
F2 = TAN F4	Field #2 will equal the tangent of field #4 when expressed in radians.
F2 = INT F4	Field #2 will equal the integer part of field #4.
F2 = RND 1	Field #2 will equal a random number. In this case, 1 is uses as the random seed.
F2 = R#	Field #2 will equal the record number of the current record.
C2 = Bar	This expression is available only in the REPORT WRITER program. It converts a number in Column #2 into a bar graph. The length of the bar will correspond to the integer part of the number.

C2 = Date # (BASIC equivalent: C2$ =MID$(C2$,4) +LEFT$(C2$,2))

This would convert a date in Column 2 which was expressed as YEAR/MONTH/DATE to MONTH/DATE/YEAR. In Example 7-7, it was suggested that dates be entered in year-month-date order for purposes of selection. The DATE command simply restores the date to a more conventional format before printing.

File Calculations can be varied, complex and are often made up of a series of equations to achieve the final desired value. Following are a few

examples which illustrate just what **Flex File 128** can do:

Example 8-2:

For sales tax purposes, field #3 is to be 4% of field #2 rounded down to the nearest cent. Therefore,

```
F# = F2 * 400
F3 = INT F3
F3 = F3 / 100
```

Example 8-3:

Field #0 can be used as a temporary storage space while evaluating other math expressions:

```
F0 = F2 + F3
F3 = F4 + F5
F6 = F6 + F0
```

Example 8-4:

In a checkbook done with **REPORT WRITER,** where column #4 was for payments, Column #5 was deposits and Column #6 was a running balance, the equations would look as follows:

```
C6 = C6 - C4 (payments are subtracted from the balance)
C6 = C6 + C5 (deposits are added to the balance)
```

A Few Words on File Calculations

DEBUGGING: If you have trouble getting a number of calculations to print properly, try reducing the number calculations to one and then printing a report. Keep increasing the number of calculations until you get an unexpected result in the report. This method of debugging will help you narrow the possible locations of your error.

RECORD TOO LONG: If a calculation has increased the record size beyond the maximum record size, this message will appear during file calculation. You will be provided with an opportunity to shorten the record before proceeding.

ORDER: If you use the **FILE CALCULATIONS** feature to recalculate a key field, the file will no longer remain in alphabetical order. The

ALPHA ORDER feature should be used to reorder the file.

For more information about the preceding operations, consult your Commodore BASIC manual or any book on the language of BASIC.

Chapter Nine SPECIAL EFFECTS

SPECIAL REPORTS

The **REPORT WRITER** feature of **Flex File 128's** includes a **MISC** listing in its menu. Two of the questions found under **MISC** are:

HOW MANY LEVELS OF SUBTOTALS?

and

SEPARATE REPORTS FOR EACH SUBTOTAL?

Both of these questions refer to **Flex File 128's** ability to print special reports.

LEVELS OF SUBTOTALS

A special report is one in which a subtotal occurs each time a category of the key is finished listing. In the Tiny Tots Toy Store the report was keyed as TYPE: SUPPLIER: PRODUCT NAME: (see Chapter Six). If you had requested one subtotal, a subtotal would have been printed each time the TYPE changed. The following illustration is an abbreviated version: **IMPORTANT: FILE MUST BE IN ORDER (ALPHABETICALLY OR NUMERICALLY ACCORDING TO IT'S KEY) IN ORDER FOR SUBTOTALING TO BE EFFECTIVE.**

Type	Sup-	Product	Price	On Hand	Total Value
KITE	25	PARACHUTE	49.50	1	49.50
KITE	25	ROTOR	15.50	3	46.50
KITE	45	BOX	12.95	20	259.00
*					355.00

TOY	02	MR. ED	4.00	5	20.00
TOY	02	SISTER SUE	5.00	5	25.00
TOY	09	BETTY BOOP	8.50	12	102.00
TOY	09	RAGGEDY ANN	8.50	12	102.00
*					249.00
TOTAL					604.00

If the same report were printed with two subtotals, then the report would subtotal with every change of the second field of the key and would look like this.

Illustration 9-2:

Type	Supplier	Product Name	Price	On Hand	Total Value
KITE	25	PARACHUTE	49.50	0	49.50
KITE	25	ROTOR	15.50	0	46.50
*					96.00
KITE	45	BOX	12.95	20	259.95
*					355.00
TOY	02	MR. ED	4.00	5	20.00
TOY	02	SISTER SUE	5.00	5	25.00
*					45.00
TOY	09	BETTY BOOP	8.50	12	102.00
TOY	09	RAGGEDY AN N	8.50	12	102.00
*					204.00
TOTAL					604.00

The rules of subtotaling reports are as follows:

- To print N subtotals, the key in use must be at least N fields deep.
- The first N fields of the key (not necessarily of the file) must be loaded into the first N columns of the report.
- If subtotaling is done incorrectly, the resulting error messages will be a suggestion for a solution.

SEPARATE REPORTS

When Y is entered in response to the question SEPARATE REPORTS AFTER SUBTOTALS?, a new report will be started each time the contents of the first column change. In the INV report shown above, two reports would have been printed, one for KITES and one for TOYS.

To achieve separate reports where you have not requested totals at the end of the columns, you must still indicate one level of subtotals. This allows the program to actually locate the start of each new report. Without a request for TOTALS AT THE END OF THE REPORT, however, no totals or subtotals will actually be printed.

WORD PROCESSING AND FLEX FILE 128

Flex File 128 can interact with several word processing programs to create form letters. Word processing can also be used to create other types of forms, log books or checks, for instance. Most word processors can only read sequential files; therefore, a file of information from **Flex File 128** should be restructured as a sequential file for merging with a word processing file. When a file is restructured as a sequential file for the purposes; of merging with a word-processing file, the fields should be in the order in which they will be used in the final letter or forms.

Most word processors which use sequential files should be compatible with **Flex File 128** for producing a form letter. Check the word-processing documentation for the control characters needed in the text to successfully merge the word-processing text with a sequential file.

Chapter Ten RESTRUCTURING A RANDOM FILE

The data which has been entered in both the **ADDRESS BOOK** and **INV** files thus far has been arranged in a **RANDOM FILE**. Once you have structured a **RANDOM FILE**. (as in stseps 1-19 of Chapter Two), you can change the set-up of the file *without retyping any data.* Restructuring a file allows you to reassign the maximum number of records, number of fields, size of each record, title of each field and number of keys. To do so involves three steps:

1. Using the **CREATE A SEQUENTIAL FILE** option, a sequential file must be created with the same structure as your original **RANDOM FILE**. The number of fields and the order of the fields should be the same.

2. With the **START A NEW FILE** option, a new **RANDOM FILE** must be created with the desired record size, number of fields, etc.

3. Using the **LOAD FROM SEQUENTIAL** feature, the contents of the sequential file are 'dumped' into the newly created **RANDOM FILE**. During the LOAD process, the order of fields can be changed, old fields can be deleted, and new fields can be left empty for later entry of data.

IMPORTANT: IT IS DIFFICULT FOR FLEX FILE 128 TO DEAL WITH BOTH A RANDOM AND A SEQUENTIAL FILE ON SEPARATE DISKS WHEN RESTRUCTURING A RANDOM FILE WITH A SINGLE DISK DRIVE. THEREFORE, KEEP BOTH THE RANDOM AND SEQUENTIAL FILES ON THE SAME DISK WHILE RESTRUCTURING, BE SURE YOUR DISK HAS ENOUGH AVAILABLE BLOCKS TO HANDLE THE OPERATION!!

Example 10-1:

Let's return to the file **ADDRESS BOOK** which was created earlier in the manual. Your address book would be even more valuable if there was a **TYPE** category which indicated whether the records were a personal friend, relative, business contact, etc. To create another field, you will need to restructure your file.

CREATE A SEQUENTIAL FILE:

From the random file **ADDRESS BOOK**, you need to create a **SEQUENTIAL FILE** as a temporary storage area for your data. Type **O (OPEN OLD FILE)** from the **MAIN MENU**, then type **ADDRESS BOOK** and press RETURN.

When the **FILE MENU** appears, type C **(CREATE SEQ FILE)**.
The screen will then read:

```
NAME OF SEQ FILE
```

(To avoid confusion between the **RANDOM FILE** and the **SEQUENTIAL FILE**, use a slightly different name.) Type BOOK and press RETURN.

The screen will read:

```
1   FIRST NAME
2   LAST NAME
3   COMPANY NAME
4   ADDRESS
5   CITY
6   STATE
7   ZIP
8   PHONE NUMBER

    HOW MANY FIELDS WILL THE SEQ FILE
    HAVE?
```

The display indicated the existing **RANDOM FILE** structure. Since you wish to add a field for TYPE, type 9 and press return.

The screen will read:

```
SEQ FIELD NO 1 SHOULD BE LOADED WITH RAND
FIELD NO:
```

Type 1 and press RETURN (since field #1 will remain #1). The same question will be asked for all fields, type the same field number. The ninth field, type 0 since you will fill it later. After all fields are answered the screen will read:

START AT RECORD NO.

Default is 1 press RETURN and the screen will read:

END AT RECORD NO:

Press RETURN and all records will be converted. Otherwise type the last number you wish to convert. The screen will read:

WILL OUTPUT BE USED BY WORD PROCESSOR?

Some word processors do not accept empty fields but will change them to single spaces. Program will ask:

OUTPUT TO CASSETTE?

When using single drive you must put **SEQUENTIAL FILE** on the same disk as **RANDOM FILE.** Press RETURN. The screen will let you make any corrections. If no corrections press N. It is possible to create **SEQUENTIAL FILES** within REPORT WRITER.

STARTING A NEW FILE

Continuing with restructuring of **ADDRESS BOOK.** Next **START A NEW FILE** by returning to **MAIN MENU** ↑

Type S to **START** a new **FILE.** The screen will read:

NAME OF NEW FILE ?

Type **AD BOOK** and press RETURN. The screen will read:

```
IF THIS FILE IS TO BE SIMILAR TO ANOTHER FILE,
ENTER THE OTHER FILE NAME.
```

Type **ADDRESS BOOK** the original. They will be alike but not identical. Answer the usual questions for starting a file being sure to add one to the "How many fields per record?" Also be sure to give a title to the new field.

LOAD FROM SEQUENTIAL FILE

- The last step is to load the **SEQUENTIAL FILE** *BOOK* into the empty **RANDOM FILE** *AD BOOK*.
- Type O from **MAIN MENU**.
- Type **AD BOOK** (the new file) and press RETURN.
- Type L from **FILE MENU**. The screen will read:

```
NAME OF SEQ FILE?
```

Type **BOOK** the name of the **SEQUENTIAL FILE**. The screen will read:

```
FILE ON CASSETTE (N=DISK)
```

Type Y or N depending. The screen will read:

```
HOW MANY FIELDS DOES THE SEQUENTIAL FILE
HAVE?
```

The default answer should be 9 simply press RETURN. The screen will ask:

```
RANDOM FIELD NO 1 SHOULD BE LOADED WITH
SEQ FIELD NO.?
```

Type 1 and press RETURN. The same question will be asked for all fields but for field #9 type 0. With no need for corrections type N. Each record will be noted on screen. After all records are loaded type R to return to **FILE MENU.**

Chapter 11: ALPHABETIC REORDERING

Open a file (say AD BOOK) type A from **File Menu**. A brief description will be displayed. To return to **File Menu** type N and press RETURN and to continue just press RETURN. The keys of the file as they now exist will be displayed along with the question:

```
WHICH KEY DO YOU WISH TO USE?
```

Select key #2 by typing 2 and pressing RETURN. The screen will display fields of the file. The screen will read:

```
HOW MANY FIELDS IN KEY #2?
```

This is a quick way to change the key field structure of a file. If you want to add a key you will need to restructure the file. The screen will read:

```
ENTER FIELD NUMBER OF 1ST FIELD OF KEY #2?
```

Type 9 and press RETURN. The screen will ask:

```
IN ALPHABETIC ORDER? (N =NUMERIC ORDER)
```

As records are added they are added alphabetically. A record with a key field of 278 would come before 68 because 2 comes before 6. If you put a 0 in front of 68 (068) it would assume its proper place. Press RETURN for the order according to the code that you will be using for the TYPE field. The screen will read:

SHORT FILE? (LESS THAN 1200 RECORDS)

Press RETURN for an answer of Y. Typing L can take hours to sort.

Size Specifications

Flex File is limitless in the way it can be used. Unfortunately, it is not infinite in its data capacities. The table below lists size specifications for **Flex File** that should not be exceeded.

Size of:	Limit
File	Dependent on structure see chart below
File Name	Maximum of 12 characters
Record	Maximum of 254 characters divided among 40 fields
Field	Maximum of 79 characters
Field Title	Maximum of 70 characters (best under 15)
Disk name	Maximum of 12 characters (no punctuation)

An estimate of the number of records you should be able to use with various combinations of disk, record size, and number of keys.

(1540, 1541, 2031, or 4040 disk drive:)

Characters/ Record	31	50	84	127	254
1 key:	3876	2571	1608	1095	560
2 keys:	3360	2333	1512	1050	547
3 keys:	2726	2135	1426	1008	536

(1571)

Characters/ Record	31	50	84	127	254
1 key:	8000	7000	3300	2300	1180
2 keys:	7000	5200	3200	2200	1150
3 keys:	5000	4500	3000	2100	1100

(1001, 8050)

Characters/ Record	31	50	84	127	254
1 key:	10000	10000	8000	6000	3000
2 keys:	7000	6500	5300	5200	2900
3 keys:	5000	4800	4400	4000	2800

Technical Support

Should you encounter a problem, technical assistance is available. We need to know:

- What part of the program was working
- What you were trying to do
- What went wrong
- What prompts were on the screen
- What the error message was on the screen

Technical support is available by writing or calling

Cardinal Software
14840 Build America Drive
Woodbridge, VA 22191

(703) 491-6494 Hours: MON-SAT 10-4 (Eastern Standard Time)

Backup Copies

To obtain a back-up copy, send request, your warranty number (you should have a registration card on file) and a check, money order or credit card no. in the amount of $5.00.

Send in your warranty card to receive updates and information.

VARIABLES

PROGRAM INFORMATION
VARIABLES

Descriptions with question marks indicate truth flags.

A	temp val of operation parameter
A1$,A2$	used in pattern matching routine
AC	all caps?
AF	true if af%(is dimentioned
AF%	(30,3)-arrangement
AL	alphabetical order? 0=numeric
AO	array offset, distance from the start of arrays to PO%(array
AR%(	arrangement
AS	ascending order? 0=descending
AX	another extra line?
B	value of 4th calc parameter
B $	2nd calc parameter
BF	browse field
BL	block number
BP	block pointer
BR	bottom record of chunk
C	value of calc parameter
CA	cassette load?
C $	4th calc parameter
C4	columns on CRT
CC	control channel file no.
CC$(	current column contents

CH%(10)	chars sent to printer
CK	change has been made to key field?
CL	change lower case to true ascii?
CP	CBM printer?
CP%(	columns widths
CR	call from change routine
CS	convert to all shifted for all caps? 128 =true
CT(md,de)	column totals
D	distance, depth of sort
D$	deletes space before default image
D9	device # of 2nd drive
DE	depth of deepest key
DF	DIF file output?
DK	highest field number in any key
DL$	dotted line chr
DR(1)	disk drive#s
DR$(1)	disk drive#s
DP	disk print?
DT	disk type
DV(1)	device# (8 or D9)
E1,E2	records to compare during alpha order
EL	empty lines
EQ$(	equality types
E	error no.
E$	error string
F1	find this record no.
F$(	field contents of a record
F1$,F2$	strings to compare

FC	field to change
FI	find this record no.
FI$	find this field string
FL	logical flag
FL$( )	logical flags: 1 bit=justify, 2 bit=total, 4 bit=average, 8 bit=numeric, 16 bit=combine
FO$	found this field string
FR	find this record no.
FS	flags subtotals printed
FT$(	field titles
G$	got this stsring from keyboard
GI$	acceptable keyboard responses
GL	need to look up files
GS	got selected record?
H	high byte
HC	how many columns, how many sequential fields
HF	how many fields per record
HH	how many header lines
HK	how many key fields
HL	how many lookup files
HL$(	header lines
HM	how many multiple lines per record
HO	how many math operations
HQ	how many sequential fields
HR	how many records
HS	how many selection statements
HT	how many type characters

ID	disk ID
IV	IRQ vector
JL	empty lines
K	peek value
KE	file # of keyboard
KK(1)	command channels
KR	level of combined records
L	length of fields that have been input or output
L()	?
L$(WA,WL)	used by mail
LD%(	allowable number of places to left of decimal point
LF$	line feed or null
LL$	long line sent to printer
LP	lines per page
LS	# of levels of subtotals
MD	maximum dimension size of arrays
ML	customize information for initial setup
MM%(	can be used to count occurrences of certain types of fields during printing of a report.
MR	maximum no. of records
N2$	name of a format file
N$(3)	"1st", "2nd", "3rd", etc.
NA$	name of a random file
NI$	numerical input string
NO	numeric operation?
NR	new report?
NS$	name of sequential file

O$	temp oo$(
OA$(,OB$(,OC$(, OO$(	1st, 2nd, 3rd, 4th math operation perameter
P	position
P1	1st page number
P%	position
PD	printer device #
PF	page force # lines allowed at bottom of page
PL	page line
PN	page number
PO%(HR,HK)	pointers keep track of the sorted order of the records
PP	pause after page
PR	printer device #
PU	usual printer device
PW	printer width
Q$	quote chr
QV	sequential file volume (see VO)
R1,R2	1st, last record of range
RA	random access file no.
RB	records per block
RC	record count
RD%(	places to right of decimal
RE	repeat same label?
RN	record number
RO	row: line # on page
RR	relative record no. (sorted position of current record)
RS	max size of each record

RV	volume of random file
RW	size to which most arrays are dimmed
R$	car return
S	sector
S%(	sectors for block map
SA%(,SB%(, ...	1st, 2nd, 3rd, 4th
SL%(	selection parameters
SC	subtal column
SE	seq file #
SF	current field sorted by (not used)
SF%(HK,5)	sort fields in each key
SH	short file?
SK	seq key field
SP	save pointers, true when bookkeeping needs to be saved
SP$	spaces for padding
SR	separate reports?
SU	switch upper and lower case? 128 =true
SV	start of variable table
T	track
T1$(,T2$(	1st and 2nd line of title of column
T$	try this string
T%(	tracks for block map
TH	too high
TL	too low
TR	top record of chunck,
UP	remember how many fields
UC$(HC)	remember columns
UK	remember key in current use

UK$(DE)	remember key columns
UR	remember record in current use
V	value from get (which key was pressed)
VO	volume (when using 2 single disks VO=1 means Device D9 when using dual
VU	disks VU=1 means drive 1
WB	which block
WC	which column
WF	which field
WK	which key
WL	which lookup file
WM	which multiple line per record
WO	which math operation
WP	WordPro output?
WR	which record
WS	which selection statement
WQ	which sequential field
WX	which extra line
X,X$,X%,X2,X$(MD)	temporary storage
X1	minimum entry
X2	maximum entry
X3	bit to change
XF	extra features?
YN$	yes-no string
Z$	chr$(0)

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